

WHAT IS CLAIMED IS

1. A method of forming a core member for joining to at least one additional core member to form a composite comprising the steps of:
  - a) providing a dielectric substrate having opposite faces;
  - 5 b) forming an electrically conductive coating on at least one face thereof;
  - c) forming at least one opening through said substrate extending from one face to the other and through each conductive coating;
  - d) dispensing an electrically conductive material in each of said openings extending through each conductive coating;
  - 10 e) removing at least a portion of surface of the conductive coating on at least one face to thereby allow a nub of the conductive material to extend above the surface of said substrate to thereby form a core than can be electrically joined face to face with another structure through said conductive material.
- 15 2. The invention as defined in claim 1 wherein said electrically conductive material is an electrically conductive adhesive.
3. The invention as defined in claim 1 wherein said electrically conductive material is a filled thermoset or thermoplastic polymer.
- 20 4. The invention as defined in claim 1 wherein said electrically conductive material is a filled polymer.

5. The invention as defined in claim 1 wherein the electrically conductive material is a filled epoxy.

6. The invention as defined in claim 4 wherein the epoxy is cured to  
5 between about 20% and about 80% of complete cure.

7. The invention as defined in claim 1 further including the step of plating  
a conductive material on the wall of each of said openings before dispensing said  
electrically conductive material in each of said openings.

10

8. The invention as defined in claim 1 wherein the electrically conductive coating is a metal and the portion of the surface is removed by partial etching.

9. The invention as defined in claim 1 wherein the electrically conductive  
15 coating is formed as two layers of different metals and where the removal of the  
surface portion of the electrical conductivity coating is removed by differential  
etching.

10. The invention as defined in claim 1 wherein at least one circuit trace is  
20 formed from said electrically conductive coating and the nub of said electrically  
conductive material extends above said at least one circuit trace.

11. The invention as defined in claim 1 wherein said electrically  
conductive material is an electrically conductive adhesive.

12. The invention as defined in claim 1 wherein the substrate is a glass reinforced epoxy.

13. The invention as defined in claim 1 wherein the substrate is a polyimide.

14. The invention as defined in claim 1 wherein the substrate is polytetrafluoroethylene.

15. The invention as defined in claim 1 wherein the electrically conductive material is dispensed into the said at least one opening in multiple passes.

16. The invention as defined in claim 1 wherein any residue of the electrically conductive material remaining on the surface of the electrically conductive coating is removed by polishing.

17. The invention as defined in claim 1 wherein any residue of the electrically conductive material remaining on the surface of the electrically conductive coating is removed by machine polishing.

18. The invention as defined in claim 1 wherein any residue of the electrically conductive material remaining on the surface of the electrically conductive coating is removed by chemical polishing.